

WHAT IS CLAIMED IS:

1                    1.     A coated composite cylinder produced by a process  
2 comprising:  
3                    drawing a metal casing on an external surface of a composite cylinder  
4 while the composite cylinder has composite material in an uncured state, thereby  
5 creating an adhesive bond between the metal casing and the composite material  
6 without the addition of a separate adhesive material.

1                    2.     The coated composite cylinder of claim 1, wherein the  
2 drawing of the metal casing includes working the cylinder to dimensional accuracy.

1                    3.     The coated composite cylinder of claim 1, wherein the  
2 composite cylinder comprises a carbon fiber composite roll.

1                    4.     The coated composite cylinder of claim 1, wherein the metal  
2 casing includes a surface formed with a surface pattern or embossment to facilitate  
3 modifying by a metal treating process and/or plating with a coating layer.

1                    5.     The coated composite cylinder of claim 1, wherein the metal  
2 casing includes a surface modified by a metal treating process and/or plated with a  
3 coating layer.

1                    6.     The coated composite cylinder of claim 5, wherein the metal  
2 casing surface is modified by a metal treating process, the metal treating process  
3 comprising rolling the surface for a threaded pattern, helical pattern, or a pattern of  
4 flutes.

1                    7.     The coated composite cylinder of claim 5, wherein the metal  
2 casing surface is plated with a coating layer, the plating including an electrolytic  
3 coating.

1                    8.        The coated composite cylinder of claim 5, wherein the metal  
2 casing surface is plated with a coating layer, the plating including a hard chromium  
3 plating or nickel plating.

1                    9.        A machine for making paper including a coated composite  
2 cylinder having a wear resistant surface for increasing the service life of the  
3 cylinder, the coated composite cylinder being produced by a process comprising:  
4                    drawing a metal casing on an external surface of a composite cylinder  
5 while the composite cylinder has composite material in an uncured state, thereby  
6 creating an adhesive bond between the metal casing and the composite material  
7 without the addition of a separate adhesive material.

1                    10.     The coated composite cylinder of claim 9, wherein the  
2 drawing of the metal casing includes working the cylinder to dimensional accuracy.

1                    11.     The coated composite cylinder of claim 9, wherein the  
2 composite cylinder comprises a carbon fiber composite roll.

1                    12.     The coated composite cylinder of claim 9, wherein the metal  
2 casing includes a surface formed with a surface pattern or embossment to facilitate  
3 modifying by a metal treating process and/or plating with a coating layer.

1                    13.     The coated composite cylinder of claim 9, wherein the metal  
2 casing includes a surface modified by a metal treating process and/or plated with a  
3 coating layer.

1                    14.     The coated composite cylinder of claim 13, wherein the metal  
2 casing surface is modified by a metal treating process, the metal treating process  
3 comprising rolling the surface for a threaded pattern, helical pattern, or a pattern of  
4 flutes.

1                            15.     The coated composite cylinder of claim 13, wherein the metal  
2 casing surface is plated with a coating layer, the plating including an electrolytic  
3 coating.

1                            16.     The coated composite cylinder of claim 13, wherein the metal  
2 casing surface is plated with a coating layer, the plating including a hard chromium  
3 plating or nickel plating.